

REMARKS / DISCUSSION OF ISSUES

The present amendment is submitted in response to the Office Action mailed April 13, 2009. Claims 1-15 remain in this application. In view of the remarks to follow, reconsideration and allowance of this application are respectfully requested.

Interview Summary

Applicants appreciate the courtesy granted to Applicant's attorney, Michael A. Scaturro (Reg. No. 51,356), during a telephonic interview conducted on Monday, June 29, 2009. During the telephonic interview, a proposed amendment to Claim 1 was submitted and discussed. The Examiner proposed certain corrections to the proposed amendment which were agreed upon by both parties to be incorporated into claim 1. The Examiner further stated that the proposed amendments, incorporating said Examiner suggested changes, appear to overcome the cited references, however, a further search will probably be required before the matter can be deemed allowable.

Rejections under 35 U.S.C. §102(e)

I. Claim 1-7, 9, and 10 are allowable

In the Office Action, Claim 1 stands rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 66,154,297 ("Javitt"). Applicant respectfully traverses the rejections.

Independent Claim 1 has been amended herein to better define Applicant's invention over Javitt. Claim 1 now recites limitations and/or features which are not disclosed by Javitt. In accordance with the Examiner's suggestion during the telephonic interview conducted on Monday, June 29, 2009, Claim 1 has been amended herein to recite in part: *wherein the receiver (20) further includes a diffuser (13; 71) encircling the at least one primary optical detector (12) to form an assembly (12, 13:71) that is arranged such that the diffuser (13;71) lies substantially in or close to the field of focus of a focusing element (11;70) for generating diffuse light by diffusely redirecting radiation intended for the at least one primary optical detector towards the at least one auxiliary detector in the case where the radiation beam is*

not aligned with the at least one primary optical detector.

As indicated by the Examiner during the telephonic interview, the amendment to claim 1, as recited above, appears to distinguish over the cited art.

Applicant further notes that Javitt does not anticipate claim 1 for an additional reason. Namely, because the cited portions of Javitt do not disclose or suggest the use of a diffuser, as recited in claim 1. Javitt describes an optical transceiver that is particularly adapted for free-space optical telecommunication that uses the same optical path for received and transmitted light to a large extent to avoid duplication of optical elements. Received light is split (i.e., beam splitter) so that different portions can be sent to physically spaced photodetectors, one of which is for detecting optically received information, and others of which are for detecting misalignment of the transceiver. In this way, the alignment detectors do not interfere with light reception by the information detector. Javitt teaches the use of a beam splitter for directing some of the received light to a position-sensing photodetector array 80. Javitt teaches that light from a light source passes out through a central aperture in the position-sensing photodetector array 80. A beam splitter splits the light, i.e., directs some of the received light to a position-sensing photodetector array 80 which is on a different optical axis from the high-speed photodetector 50. In this manner, the interference of the position-sensing array 80 with light reception by the high-speed photodetector 50 is substantially reduced.

The problem solved by the invention is not directed to an optical transceiver that is particularly adapted for free-space optical telecommunication that uses the same optical path for received and transmitted light to a large extent to avoid duplication of optical elements, as taught by Javitt, but is instead directed to providing a receiver having a wider field of view, enabling some data reception to take place when the receiver is not aligned, even for multiple transmitters at different angular positions, and enabling adaptations for acquisition and tracking to take place over a wider angle of incidence. This can only be achieved by using a diffuser for redirecting radiation towards the auxiliary detector. The diffuser enables the receiver to have a relatively wide field of view. This provides several potential

advantages. First, it allows for adaptations that enable some data reception to take place when the receiver is not aligned, even for multiple transmitters at different angular positions. It also enables adaptations for acquisition and tracking to take place over a wider angle of incidence. The arrangement also enables, if desired, construction with less, relatively cheap and/or simple components. The receiver can be adapted for use in a range of optical networks.

It is well known in the optical arts that a diffuser is an optical element that generates diffuse light. Diffuse light can be generated by diffuse reflection and/or diffuse transmission. The "Fiber Optics Standard Dictionary", Martin H. Weik, Kluwer Academic Publ; edition: 0003 (August 1997, ISBN-10: 0-412-12241-3, page 222.

diffuse reflection: *1. Reflection of an incident, but not necessarily parallel, coherent, or collimated, group of light rays from a rough surface, such that (a) different parts of the same group are reflected in different directions as Snell's laws of reflection and refraction are microscopically obeyed at each undulation of the rough surface and (b) formation of a clear image of the light source or of the illuminated object is impossible. 2. Reflection from a rough surface, such as pebbled glass or a fogged mirror, so that a clear image of the rough surface can be obtained but an image of the source, such as a light source or light reflected from an illuminated object, cannot be formed on a transverse surface such as a screen or the retina of the eye.*

diffuse transmission: *The propagation of lightwaves in a propagation medium in which (a) there is a high level of attenuation caused by diffusion, (b) clear images are not transmitted, and (c) signal attenuation is excessive. Note: Diffuse transmission can be observed when a narrow lightbeam is passed through fog, murky water, or particles in suspension in a liquid.*

A beam splitter, such as the one described in Javitt, does not provide a reflection of an incident group of light rays from a rough surface such that a formation of a clear image of the light source or of the illuminated object is impossible. Furthermore, a beam splitter does not provide a reflection from a rough surface, such as pebbled glass or a fogged mirror, so that a clear image of the rough surface can be obtained but an image of the source, such as a light source or light reflected from an illuminated object, cannot be formed on a transverse surface, such as a screen or the retina of the eye. A beam splitter does therefore not

generate diffuse light by diffuse reflection. Moreover, when light waves propagate through the beam splitter, there is not a high level of attenuation caused by diffusion, clear images are transmitted and signal attenuation is not excessive. Therefore, the beam splitter does not generate diffuse light by diffuse transmission.

Since a beam splitter does not generate diffuse light, a beam splitter is not a diffuser. Diffuse light can be regarded as being composed of a large amount of small light beams which propagate in all possible directions (See definition above). For example, if diffuse light is generated by reflection on a rough surface, the generated diffuse light is composed of small light beams propagating in all possible directions within the half-space delimited by the rough reflection surface. The use of a diffuser in a receiver in accordance with claim 1 has the effect that the receiver is enabled to have a relatively wide field of view, which is the primary problem solved by the invention and not addressed by Javitt.

In contrast to the diffuser of the invention, the beam splitter of Javitt, does not diffusely redirect incident radiation, and is therefore more sensitive to misalignments of the radiation beam, because the radiation beam incident on the beam splitter is directed only in one or two directions, and not in all possible directions as by using a diffuser. Hence, claim 1 is allowable.

Claims 2-7, 9 and 10 depend from independent Claim 1 and therefore contains the limitations of Claim 1 and is believed to be in condition for allowance for at least the same reasons given for Claim 1 above. Accordingly, withdrawal of the rejection under 35 U.S.C. §102(b) and allowance of Claims 2-7, 9 and 10 is respectfully requested.

II. Claim 15 is Allowable

Independent Claim 15 recites similar subject matter as Claim 1 and therefore contains the limitations of Claim 1. Hence, for at least the same reasons given for Claim 1, Claim 15 is believed to contain patentable subject matter.

III. Claim 8 is allowable

In the Office Action, Claim 8 stands rejected under 35 U.S.C. §103(a) as being anticipated by Javitt and U.S. Patent Application No. 2004/0208595 ("Mok"). Applicant respectfully traverses the rejection.

As explained above, the cited portions of Javitt do not disclose or suggest each and every element of claim 1 from which claim 8 depends. Mok does not disclose each of the elements of claim 1 that are not disclosed by Javitt. For example, Mok does not disclose or suggest *wherein the receiver (20) further includes a diffuser (13; 71) encircling the at least one primary optical detector (12) to form an assembly (12, 13:71) that is arranged such that the diffuser (13;71) lies substantially in or close to the field of focus of a focusing element (11;70) for generating diffuse light by diffusely redirecting radiation intended for the at least one primary optical detector towards the at least one auxiliary detector in the case where the radiation beam is not aligned with the at least one primary optical detector.*

Mok is cited by the Office for disclosing a redirecting element arranged in the path of the incoming beam, wherein the control system aligns the primary detector with the radiation beam by moving the element.

Thus, the cited portions of Javitt and Mok, individually or in combination, do not disclose or suggest *wherein the receiver (20) further includes a diffuser (13; 71) encircling the at least one primary optical detector (12) to form an assembly (12, 13:71) that is arranged such that the diffuser (13;71) lies substantially in or close to the field of focus of a focusing element (11;70) for generating diffuse light by diffusely redirecting radiation intended for the at least one primary optical detector towards the at least one auxiliary detector in the case where the radiation beam is not aligned with the at least one primary optical detector.*

III. Claim 8 is allowable

In the Office Action, Claim 8 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Javitt and U.S. Patent Application No. 2004/0208595 (“Mok”). Applicant respectfully traverses the rejection.

As explained above, the cited portions of Javitt do not disclose or suggest each and every element of claim 1 from which claim 8 depends. Mok does not disclose each of the elements of claim 1 that are not disclosed by Javitt. For example, Mok does not disclose or suggest *wherein the receiver (20) further includes a diffuser (13; 71) encircling the at least one primary optical detector (12) to form an assembly (12, 13:71) that is arranged such that the diffuser (13;71) lies substantially in or close to the field of focus of a focusing element (11;70) for generating diffuse light by diffusely redirecting radiation intended for the at least one primary optical detector towards the at least one auxiliary detector in the case where the radiation beam is not aligned with the at least one primary optical detector.*

Mok is cited by the Office for disclosing a redirecting element arranged in the path of the incoming beam, wherein the control system aligns the primary detector with the radiation beam by moving the element.

Thus, the cited portions of Javitt and Mok, individually or in combination, do not disclose or suggest *wherein the receiver (20) further includes a diffuser (13; 71) encircling the at least one primary optical detector (12) to form an assembly (12, 13:71) that is arranged such that the diffuser (13;71) lies substantially in or close to the field of focus of a focusing element (11;70) for generating diffuse light by diffusely redirecting radiation intended for the at least one primary optical detector towards the at least one auxiliary detector in the case where the radiation beam is not aligned with the at least one primary optical detector.* Hence, claim 8 is allowable.

IV. Claim 11 is allowable

In the Office Action, Claim 11 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Javitt. Applicant respectfully traverses the rejection.

As explained above, the cited portions of Javitt do not disclose or suggest each and every element of claim 1 from which claim 11 depends and therefore contains the limitations of Claim 1 and is believed to be in condition for allowance for at least the same reasons given for Claim 1 above. Accordingly, withdrawal of the rejection under 35 U.S.C. §103(a) and allowance of Claim 11 is respectfully requested.

V. Claims 12-14 are allowable

In the Office Action, Claims 12-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Javitt and U.S. Patent Application No. 2002/0131121 (“Jeganathan”). Applicant respectfully traverses the rejections.

As explained above, the cited portions of Javitt do not disclose or suggest each and every element of claims 1 from which claims 12-14 depend. Jeganathan does not disclose each of the elements of claim 1 that are not disclosed by Javitt. For example, Jeganathan does not disclose or suggest *wherein the receiver (20) further includes a diffuser (13; 71) encircling the at least one primary optical detector (12) to form an assembly (12, 13;71) that is arranged such that the diffuser (13;71) lies substantially in or close to the field of focus of a focusing element (11;70) for generating diffuse light by diffusely redirecting radiation intended for the at least one primary optical detector towards the at least one auxiliary detector in the case where the radiation beam is not aligned with the at least one primary optical detector.*

Thus, the cited portions of Javitt and Jeganathan, individually or in combination, do not disclose or suggest *wherein the receiver (20) further includes a diffuser (13; 71)*

encircling the at least one primary optical detector (12) to form an assembly (12, 13:71) that is arranged such that the diffuser (13;71) lies substantially in or close to the field of focus of a focusing element (11;70) for generating diffuse light by diffusely redirecting radiation intended for the at least one primary optical detector towards the at least one auxiliary detector in the case where the radiation beam is not aligned with the at least one primary optical detector. Hence, claims 12-14 are allowable.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1-15 are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Mike Belk, Esq., Intellectual Property Counsel, Philips Electronics North America, at 914-945-6000.

Respectfully submitted,



Michael A. Scaturro
Reg. No. 51,356
Attorney for Applicant

Mailing Address:
Intellectual Property Counsel
Philips Electronics North America Corp.
P.O. Box 3001
345 Scarborough Road
Briarcliff Manor, New York 10510-8001